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CHRISTOPHER P. MAIORANA, P.C.
24840 HARPER
ST. CLAIR SHORES, MI 48080

EXAMINER

TORRES, JOSEPH D

ART UNIT	PAPER NUMBER
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2133

DATE MAILED: 04/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/017,528

Applicant(s)

JHA, PANKAJ K.

Examiner

Joseph D. Torres

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) 9-13 and 15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 14 is/are rejected.
- 7) ☒ Claim(s) 14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 December 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3.
- 4) ☒ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-8 and 14, drawn to A Method for Delineating a Frame at a Receiver, classified in class 714, subclass 776.
 - II. Claims 9-13 and 15, drawn to A Method for Creating a Frame, classified in class 714, subclass 776.

The inventions are distinct, each from the other because of the following reasons:

Inventions Group I, A Method for Delineating a Frame at a Receiver, and Group II, A Method for Creating a Frame, are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention Group I, A Method for Delineating a Frame at a Receiver, has separate utility such as in a receiver. In the instant case, invention Group II, A Method for Creating a Frame, has separate utility such as a transmitter. See MPEP § 806.05(d).

Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

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Because these inventions are distinct for the reasons given above and the search required for Group II is not required for Group I, restriction for examination purposes as indicated is proper.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

During a telephone conversation with Christopher Maiorana on 24 March 2004 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-8 and 14. Affirmation of this election must be made by applicant in replying to this Office action. Claims 9-13 and 15 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Drawings

2. The drawings are objected to because of handwriting (handwriting is not clearly legible). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Claim Objections

3. Claim 14 is objected to because of the following informalities: the preamble of claim 14 recites "An apparatus". 37 CFR 1.75 states the "specification must conclude with a claim particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention or discovery. Claim 14 should be rewritten so that it is clear what the Applicant regards as his invention. The Examiner suggests replacing the preamble with --An apparatus for delineating a frame--.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-8 and 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites, "a length value incorporating a payload error detection length". It is not clear how the "payload error detection length" is incorporated into the "length value".

Claim 6 recites, "jumping a number of bytes equal to said length value". It is not clear how a number of bytes of bytes can be equal to "a length value incorporating a payload error detection length" since it is not clear the "a length value incorporating a payload error detection length" is a number.

Claim 2 recites the limitation "said error detection value" in line 6. There is insufficient antecedent basis for this limitation in the claim. Note: there are a multitude of error detection values in previous claim language and it is not clear what value, "said error detection value" refers to. The examiner suggests changing "calculating an error detection value" in line 4 to --calculating an error detection value to form a calculated error detection value-- and making the appropriate changes in subsequent claim language to remove all lack of antecedent problems in the claim language.

Claim 2 recites the limitation "said value" in line 9. There is insufficient antecedent basis for this limitation in the claim. Note: there are a multitude of values in previous claim language and it is not clear what value, "said value" refers to.

Claim 3 recites the limitation "said value" in line 4. There is insufficient antecedent basis for this limitation in the claim.

Claims 2-8 depend from claim 1, hence inherit the deficiencies in claim 1.

Claim 14 recites substantially similar language as in claim 1.

Claims 1-8 and 14 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. Claim 1 recites, "a length value incorporating a payload error detection length". The omitted structural cooperative relationships are: the relationship between "a length value" and "a payload error detection length".

Claims 2-8 depend from claim 1, hence inherit the deficiencies in claim 1.

Claim 14 recites substantially similar language as in claim 1.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
5. Claims 1-6, 8 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Agarwal; Anil K. et al. (US 6477669 B1, hereafter referred to as Agarwal) in view of Doshi, Bharat Tarachand et al. (EP 942569 A2, hereafter referred to as Doshi).

35 U.S.C. 103(a) rejection of claims 1 and 14.

Agarwal teaches a method for delineating a frame comprising the steps of:

(A) receiving said frame (MUX 100 in Figure 1 of Agarwal is a means for receiving the frame of Figure 2 in Agarwal) comprising i. a length value (SIZEO 264 and CODING 266 in Figure 2 comprise a length value; Note: the bottom of Col. 6 and the top of col. 7

teach that SIZEO 264 contains the variable size defining the space within the data payload and the CODING field represents a suggested value of the number of octets which are reserved for forward error correction) incorporating a payload error detection length (the top of col. 7 of Agarwal teach that the CODING field represents a suggested value of the number of octets which are reserved for forward error correction, i.e., the length value incorporates the payload forward error correction length value, CODING; Note: an error correction code is inherently an error detection code), iii. a payload data (cells in Figure 2 of Agarwal are payload data), and iv. a payload error detection value having said payload error detection length (RS Check Octets 250 of Figure 2 in Agarwal are a payload error detection value having said payload error detection length, CODING), wherein said payload error detection value and said payload data occupy separate fields of said frame (in Figure 2 in Agarwal said payload error detection value, RS Check Octets 250, and said payload data cells occupy separate fields of said frame);

(C) retrieving said payload data and said payload error detection value based upon said length value (col. 7, lines 51-57 in Agarwal teach the adaptive coding scheme selects the optimal forward error correction code length and that the decoding and coding is based upon the forward error correction code length).

However Agarwal does not explicitly teach the specific use of a length error detection value.

Doshi, in an analogous art, teaches the use of a Header CRC for providing protection for an SDL header that includes a length indicator, hence a Header CRC is a length

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error detection value. The Examiner asserts that one of ordinary skill in the art at the time the invention was made would have been highly motivated to use a Header CRC, i.e., a length error detection value, in order to provide protection for important control information contained in the header. Note also, that col. 2, lines 38-44 of Doshi teach that the receiver performs self synchronization or packet recovery as a function of the L1 field and the Header CRC and that the Header CRC is used to perform error detection on the SDL header, hence Doshi teaches performing an error detection on the length value (Length indicator L1 in Figure 1 of Doshi) based upon the length error detection value (Header CRC in Figure 1 of Doshi). In addition, col. 2, lines 27-30 of Doshi teach that the length indicator, L1 in Figure 1 of Doshi, is used for packet boundary recovery required in retrieving the payload data, INFORMATION, and payload error detection values, FCS, based upon the length value, L1, hence Doshi teaches retrieving said payload data, INFORMATION, and said payload error detection value, FCS, based upon said length value, L1, in response to passing said Header CRC error detection on said length value, L1.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Agarwal with the teachings of Doshi by including use of a length error detection value. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that use of a length error detection value would have provided the opportunity to provide protection for important control information contained in the header.

35 U.S.C. 103(a) rejection of claim 2.

Agarwal and Doshi teach buffering a plurality of received bytes (De-Interleaver RAM 1060 in Figure 4 of Agarwal is a buffer for buffering a plurality of received bytes); calculating an error detection value from a first predetermined group of said received bytes; comparing said error detection value with a value defined by a second predetermined group of said received bytes (Step 520 in Figure 6 of Doshi is a CRC check for calculating an error detection value from a first predetermined group, i.e., the SDL header, of said received bytes and comparing said calculated error detection value with a value defined by a second predetermined group, i.e., the Header CRC, of said received bytes; Note: the standard algorithm used for CRC checking at the receiver requires that the CRC be recalculated again from the error protected bits); and marking a start of said frame in response to said error detection value matching said value (the Abstract in Doshi teaches that the length indicator is used in self-delineation of the frame).

35 U.S.C. 103(a) rejection of claim 3.

Agarwal and Doshi substantially teaches the claimed invention described in claims 1 and 2 (as rejected above).

However Agarwal and Doshi do not explicitly teach the specific use of a step buffering at least one subsequent byte of said received bytes in response to said error detection value being different than said value.

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The Examiner asserts that if the calculated error detection value is different from the received error detection value then the protected information was received with errors and cannot be processed. It would be obvious to buffer all of or part of the error protected information for use in recovery of the protected information to prevent loss of information.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Agarwal and Doshi by including an additional step of buffering at least one subsequent byte of said received bytes in response to said error detection value being different than said value. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that buffering at least one subsequent byte of said received bytes in response to said error detection value being different than said value would have provided the opportunity to implement a required recovery process for extracting corrected protected information and to prevent loss of any information.

35 U.S.C. 103(a) rejection of claim 4.

Steps 530-545 in Figure 6 of Doshi is a step for reading said length value from said first predetermined group (see col. 7, lines 1-10 in Doshi for details).

35 U.S.C. 103(a) rejection of claim 5.

The payload data must be separated from the payload RS CRC error detection check values in Figure 2 of Agarwal in order to recompute the payload RS CRC error detection check values to verify the payload data.

35 U.S.C. 103(a) rejection of claim 6.

Figure 3 in Doshi teaches jumping a number of bytes equal to said length value from a start of said payload data to reach a next frame.

35 U.S.C. 103(a) rejection of claim 8.

Agarwal and Doshi substantially teach the claimed invention described in claims 1-6 (as rejected above).

However Agarwal and Doshi do not explicitly teach the specific use of a computer program for executing the steps in claim 1 stored in a computer readable medium.

The Examiner asserts that Agarwal and Doshi teach all of the limitations of claim 1 and that one of ordinary skill in the art at the time the invention was made would have known how to write a computer program to implement the method of claim 1 based on obvious engineering design choices such as flexibility, cost and feasibility (Note: software solutions provide flexible and inexpensive solutions at the expense of speed).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Agarwal and Doshi by including use of a computer program for executing the steps in claim 1 stored in a computer readable medium. This modification would have been obvious to one of ordinary skill in the art,

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at the time the invention was made, because one of ordinary skill in the art would have recognized that use of a computer program for executing the steps in claim 1 stored in a computer readable medium would have provided the opportunity to implement the method of claim 1 based on obvious engineering design choices such as flexibility, cost and feasibility (Note: software solutions provide flexible and inexpensive solutions at the expense of speed).

6. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Agarwal; Anil K. et al. (US 6477669 B1, hereafter referred to as Agarwal) and Doshi, Bharat Tarachand et al. (EP 942569 A2, hereafter referred to as Doshi) in view of Zhu; Qin-Fan (US 5550847 A).

35 U.S.C. 103(a) rejection of claim 7.

Agarwal and Doshi substantially teach the claimed invention described in claims 1-6 (as rejected above).

However Agarwal and Doshi do not explicitly teach the specific use of substantially repackaging the same frame as a previously sent frame (Note: claim 7 is substantially directed to repackaging the same frame as a previously sent frame).

Zhu, in an analogous art, teaches retransmitting previously transmitted information for the purposes of recovering lost or damaged data.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Agarwal and Doshi with the teachings of Zhu by including

an additional step of repackaging the same frame as a previously sent frame. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that repackaging the same frame, as a previously sent frame would have provided the opportunity to recover lost or damaged data.

Conclusion

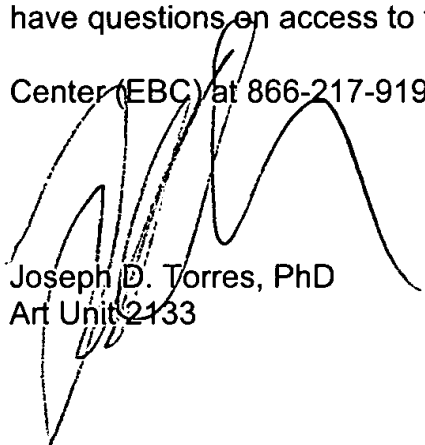
7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Suzuki; Takashi et al. (US 6522665 B1) teaches a data sequence generator for generating a data sequence suitable for transmission of a data sequence composed of variable length frames having information data of variable length. Gibson; William A. et al. (US 6445717 B1) teaches generation and transmission of additional parity packets and the use of the additional parity packets to reconstruct one or more information packets which are lost between transmission and reception.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph D. Torres whose telephone number is (703) 308-7066. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on (703) 305-9595. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Joseph D. Torres, PhD
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